



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,011	04/21/2004	Raymond Kwong	10052/4502	5983

39683 7590 02/10/2005

UNIVERSAL DISPLAY CORPORATION
375 PHILLIPS BLVD.
EWING, NJ 08618

EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
----------	--------------

1774

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/829,011

Applicant(s)

KWONG ET AL.

Examiner

Marie R. Yamnitzky

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004 and 16 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date rec'd 16 June 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1774

1. The drawings are objected to because it is difficult to distinguish between the different symbols used for the different sets of data points in Figure 3, particularly between the symbols used for $\text{Ir}(\text{pq})_2(\text{acac})$ and $\text{Ir}(\text{Ph-ppy})_3$, and because the photographs for Figures 4A-4D are not of sufficient quality to permit all details in the photographs to be reproducible in a printed patent. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The disclosure is objected to because of the following informalities:

The specification only describes one comparative example made with Ir(ppy)₃, but Figure 3 includes three different sets of data points for Ir(ppy)₃. It is not clear how the three sets of data points for Ir(ppy)₃ in Figure 3 were obtained.

Per Table 2 on page 45, the CIE coordinates for Example 7 are 0.61, 0.64. These coordinates are not within the CIE 1931 chromaticity chart, or within the 1960 or 1976 revisions. The examiner notes that the CIE coordinates for Example 10, which has the same device structure and composition as Example 7, are 0.31, 0.64 (see Table 3 on page 46 and Examples 7 and 10 on pages 48 and 49).

Appropriate correction/clarification is required.

3. Claims 1-7, 9-22, 24, 26, 28-33 and 36 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for organic light emitting devices having the claimed pixel shrinkage properties wherein the device comprises at least one of Ir(pq)₃, Ir(3-Mepq)₃, Ir(Ph-ppy)₃ or Ir(1-piq)₃ as an emissive material, and while being enabling for organic light emitting devices of the structure and composition demonstrated by the examples to provide the claimed pixel shrinkage properties, does not reasonably provide enablement for the full scope of the present claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

It is the examiner's position that it would require undue experimentation to determine the full scope of devices within the scope of the present claims that limit pixel shrinkage.

Based on the present disclosure, the shrinkage properties of a pixel are affected not only by the specific phosphorescent emissive material that is used, but also by other components of the pixellated device, such as materials in physical contact with the phosphorescent material.

There are a variety of phosphorescent emissive materials, and a variety of auxiliary materials that may be in physical contact with the emissive material. Applicant's examples are insufficient to demonstrate any predictability in selecting phosphorescent emissive materials and combinations of emissive and auxiliary materials that would provide devices meeting the shrinkage limitations of the present claims.

With respect to the %area shrinkage limitation, this property is also affected by the initial size of the pixel. Based on the present disclosure, the larger the initial size of the pixel, the more likely the device is to meet the present claim limitation. Accordingly, in order to determine the scope of devices meeting the limitations of claim 1, for example, one would have to test various phosphorescent emissive materials as well as various combinations of phosphorescent emissive materials and auxiliary materials, as well as determine the minimum pixel size necessary to provide the maximum allowable % area pixel shrinkage.

Figure 3 shows zero pixel shrinkage for Ir(pq)₃, Ir(3-Mepq)₃ and Ir(Ph-ppy)₃ in a device operated at about 10 mA/cm² constant current for at least 1000 hours at room temperature. Example 8 describes zero pixel shrinkage for Ir(1-piq)₃ in a device operated at 40 mA/cm² constant current for 1000 hours at room temperature. The device of example 8 is operated at a

higher constant current than specified in the claims, but it is reasonable to expect that pixel shrinkage would also be zero for the same device operated at the lower constant current specified in the claims since the operating conditions would be less harsh. The examiner will presume for the sake of argument that any pixellated organic light emitting device comprising at least one of these four materials, regardless of the other components and structural details of the device, will exhibit zero pixel shrinkage. However, if this is an incorrect presumption, then even claims 8, 23, 25 and 27 are broader in scope than the enabling scope of the disclosure because these claims do not limit the composition and structure of the device beyond the requirement for an array of pixels and one specific phosphorescent emissive material.

4. Claims 1-33 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Proper antecedent basis is lacking for “the pixel shrinkage” as recited in independent claims 1 and 29. Since the claimed device comprises a plurality of pixels, it is not clear if “the pixel shrinkage” refers to shrinkage of each pixel, or refers to shrinkage of at least one pixel. It is also not clear in view of the specification if, in a multicolored display in which each pixel comprises a plurality of subpixels, pixel shrinkage refers to the pixel as a whole, or to one or more of the subpixels.

The pixel shrinkage limitations of present claims 1-33 also render claims 1-33 indefinite because the initial size of the pixel(s) is unlimited.

Art Unit: 1774

The use of the term “and” in the last line of claims 9 and 11 is confusing. It is not clear which of the following possibilities is/are encompassed by the language of claims 9 and 11:

- (a) two R variables form a 5-member cyclic group or a 6-member cyclic group fused to the 6-member benzene or pyridine ring to which the R variables are attached;
- (b) two R variables form a 5-member cyclic group which is fused to the 6-member benzene or pyridine ring (but not a 6-member cyclic group fused to the benzene or pyridine);
- (c) two R variables form a group having a 5-member cyclic group fused to a 6-member cyclic group, and this group as a whole is in turn fused to the 6-member benzene or pyridine ring.

The correlation between the pixel shrinkage limitation of claim 15 and the pixel shrinkage limitation of claim 1, from which claim 15 ultimately depends, is unclear, particularly since the claims place no explicit limit on the size of the pixels. Likewise, the correlation between the pixel shrinkage limitation of claim 28 and the pixel shrinkage limitation of claim 1, from which claim 28 ultimately depends, is unclear.

Claim 36: There is no antecedent basis for “the pixel shrinkage” as dependent from claim 34. Claim 34 is silent with respect to pixel(s). The pixel shrinkage limitation also renders claim 36 indefinite because the initial size of the pixel(s) is unlimited.

5. A rejection based on double patenting of the “same invention” type finds its support in the language of 35 U.S.C. 101 which states that “whoever invents or discovers any new and useful process ... may obtain a patent therefor ...” (Emphasis added). Thus, the term “same invention,” in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

Art Unit: 1774

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

6. Claims 1-5, 7-12, 15-21 and 28-44 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-11, 14-20 and 25-41 of copending Application No. 10/421,074. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

7. Claims 6, 13, 14 and 22-27 are not included in the provisional rejection under 35 U.S.C. 101 because they are currently not identical in scope to any of the claims pending in the '011 application.

The examiner notes that claims 13 and 14 will be claiming the same invention as that of copending claims 12 and 13 in the '074 application if copending claims 12 and 13 are amended to depend from copending claim 11 in response to a rejection under 35 U.S.C. 112, second paragraph, in the '074 application.

The examiner notes that claims 22-25 will be claiming the same invention as that of copending claims 21-24 in the '074 application if copending claims 21 and 23 are amended to depend from copending claim 18 in response to a rejection under 35 U.S.C. 112, second paragraph, in the '074 application.

Art Unit: 1774

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 2, 5, 9-12, 15, 17, 18, 21 and 28-31 are rejected under 35 U.S.C. 102(e), and claims 26 and 27 are rejected under 35 U.S.C. 102(b), as being anticipated by Kamatani et al. (US 2003/0068526 A1).

Kamatani's published application is applied as prior art under 35 U.S.C. 102(b) against claims 26 and 27 because, although the subgenus of claim 26 and the species of claim 27 is encompassed by the generic disclosure of parent application No. 10/421,074, the subgenus and species is not disclosed in the '074 application, and there is no data in the '074 disclosure pertaining to pixel shrinkage characteristics provided by this subgenus or species. Accordingly, the effective filing date with respect to the device as claimed in present claims 26 and 27 is considered by the examiner to be April 21, 2004.

Kamatani's compound No. 1 (see Table 1 and paragraphs [0189]-[0194]) is the compound represented by the formula set forth in present claim 26, which is Ir(1-piq)₃.

Kamatani et al. disclose this compound for use as a phosphorescent emissive material in the emissive layer of an organic light emitting device. The device may be a pixellated display

Art Unit: 1774

device. For example, see paragraphs [0143]-[0148] and Fig. 4. As depicted in Fig. 4, the pixels are defined by a grid.

Example 8 of the present application demonstrates that $\text{Ir}(\text{1-piq})_3$ has zero pixel shrinkage in a device operated at 40 mA/cm^2 constant current for 1000 hours at room temperature. The device of example 8 is operated at a higher constant current than specified in the present claims, but it is reasonable to expect that pixel shrinkage would also be zero for the same device operated at the lower constant current specified in the claims since the operating conditions would be less harsh. Accordingly, it is reasonable to expect that a pixellated device according to Kamatani et al. which utilizes Kamatani's compound No. 1 will inherently meet the pixel shrinkage limitations recited in present claims 1, 15, 29 and 30, regardless of the initial size of the pixels.

10. Claims 1, 2, 5, 7, 8, 10, 12, 15 and 29-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsuboyama et al. (US 2003/0068536 A1).

Tsuboyama's compound No. 523 as defined in Table 17 and compound No. 528 as named in paragraph [0164] is the compound represented by the formula set forth in present claim 8, which is $\text{Ir}(\text{Ph-ppy})_3$. (The examiner notes that Ex. Comp. Nos. 523 and 528 as named in Example 16 on page 22 are the reverse of Nos. 523 and 528 as defined in Table 17 of the prior art.)

Tsuboyama et al. disclose this compound for use as a phosphorescent emissive material in the emissive layer of an organic light emitting device. The device may be a pixellated display

device. For example, see paragraphs [0070]-[0074] and Fig. 2. As depicted in Fig. 2, the pixels are defined by a grid.

Fig. 3 of the present application demonstrates that Ir(Ph-ppy)_3 has zero pixel shrinkage. Accordingly, it is reasonable to expect that a pixellated device according to Tsuboyama et al. which utilizes Tsuboyama's compound No. 523 as defined in Table 17/compound No. 528 as named in paragraph [0164] will inherently meet the pixel shrinkage limitations recited in present claims 1, 15, 29 and 30, regardless of the initial size of the pixels.

11. Claims 1, 2, 5, 7, 8, 10, 12, 15 and 29-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Brown et al. (US 2004/0086743 A1).

The applied reference has a common inventor with the instant application, but a different inventive entity. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Brown's compound of formula VII as depicted, for example, in paragraph [0084] is the compound represented by the formula set forth in present claim 8, which is Ir(Ph-ppy)_3 .

Brown et al. disclose this compound for use as a phosphorescent emissive material in the emissive layer of an organic light emitting device. The device may be a pixellated display device. For example, see paragraphs [0001], [0007] and [0049].

Art Unit: 1774

Fig. 3 of the present application demonstrates that Ir(Ph-ppy)₃ has zero pixel shrinkage. Accordingly, it is reasonable to expect that a pixellated device according to Brown et al. which utilizes Brown's compound of formula VII will inherently meet the pixel shrinkage limitations recited in present claims 1, 15, 29 and 30, regardless of the initial size of the pixels.

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 3, 4, 13, 14, 16, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamatani et al. (US 2003/0068526 A1) as applied to claims 1, 2, 5, 9-12, 15, 17, 18, 21 and 26-31 above and for the further reasons set forth below.

Kamatani et al. teach a pixellated display device but do not specifically disclose the use of a photoresist material to make a grid which defines the pixels as required by present claims 3, 4, 13, 14, 32 and 33, and do not limit the pixel pitch as required by present claim 16.

It would have been within the level of ordinary skill of a worker in the art at the time of the invention to provide pixels by known techniques, and the use of photoresists, positive or negative, was known at the time of the invention.

With respect to the pixel pitch limitation, it would have been within the level of ordinary skill of a worker in the art at the time of the invention to determine suitable dimensions for the pixel array based on the intended use of the pixellated device.

14. Claims 3, 4, 13, 14, 16, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuboyama et al. (US 2003/0068536 A1) as applied to claims 1, 2, 5, 7, 8, 10, 12, 15 and 29-31 above and for the further reasons set forth below.

Tsuboyama et al. teach a pixellated display device but do not specifically disclose the use of a photoresist material to make a grid which defines the pixels as required by present claims 3, 4, 13, 14, 32 and 33, and do not limit the pixel pitch as required by present claim 16.

It would have been within the level of ordinary skill of a worker in the art at the time of the invention to provide pixels by known techniques, and the use of photoresists, positive or negative, was known at the time of the invention.

With respect to the pixel pitch limitation, it would have been within the level of ordinary skill of a worker in the art at the time of the invention to determine suitable dimensions for the pixel array based on the intended use of the pixellated device.

15. Claims 3, 4, 13, 14, 16, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US 2004/0086743 A1) as applied to claims 1, 2, 5, 7, 8, 10, 12, 15 and 29-31 above and for the further reasons set forth below.

The applied reference has a common inventor with the instant application, but a different inventive entity. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention “by another”; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Brown et al. teach a pixellated display device but do not specifically disclose the use of a photoresist material to make a grid which defines the pixels as required by present claims 3, 4, 13, 14, 32 and 33, and do not limit the pixel pitch as required by present claim 16.

It would have been within the level of ordinary skill of a worker in the art at the time of the invention to provide pixels by known techniques, and the use of photoresists, positive or negative, was known at the time of the invention.

With respect to the pixel pitch limitation, it would have been within the level of ordinary skill of a worker in the art at the time of the invention to determine suitable dimensions for the pixel array based on the intended use of the pixellated device.

16. Claims 34, 35, 37, 38 and 40-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grushin et al. (US 2002/0121638 A1).

Grushin et al. disclose iridium compounds having fluorinated phenylquinoline ligands for use in the emissive layer of an organic light emitting device. See the whole published application. In particular, see paragraphs [0002], [0008]-[0027], [0035]-[0039], [0043]-[0044] and [0050].

Grushin et al. suggest compounds of formula I_b as defined in present independent claims 34 and 40 wherein M is Ir and R⁹ is selected from the group consisting of F, R and OR wherein each R (of R and OR) is C₁-C₆ alkyl substituted by at least one F. Such compounds are iridium compounds of Grushin's "Third Formula" wherein L^a=L^b=L^c, which is a preferred embodiment as taught in paragraphs [0043]-[0044], made from a precursor compound of structure (III) as shown at the top of page 2 wherein R₁₀ is selected from the possibilities set forth in paragraph [0025].

Grushin et al. do not disclose a specific example of a compound of present formula I_b, but it have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to make various compounds within the scope of Grushin's disclosure with the expectation that such compounds would be suitable for use in an organic light emitting device as taught by Grushin et

Art Unit: 1774

al. One of ordinary skill in the art would have reasonably expected that precursor compounds of Grushin's structure (III) wherein any one of R_{10} - R_{19} is fluorine or a fluorinated alkyl or alkoxy group could be used to make iridium compounds suitable for use in an emissive layer of an organic light emitting device.

17. Claims 1-4 and 29-33 are rejected under 35 U.S.C. 103(a) as being obvious over Kwong et al. (US 6,835,469 B2).

The applied reference has a common inventor with the instant application, but a different inventive entity. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was

Art Unit: 1774

made, owned by the same person or subject to an obligation of assignment to the same person.

See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Kwong's Compound 12, which is required for the patented claims and synthesized according to Kwong's Example 14 (col. 34-35), is Ir(3-Mepq)₂(acac) as depicted in Figure 4 of the present application.

Kwong et al. disclose this compound for use as a phosphorescent emissive material in the emissive layer of an organic light emitting device. The device may be a pixellated display device. For example, see col. 1, lines 6-8 and c. 24, l. 51-c. 26, l. 47.

Figure 3 of the present application demonstrates that Ir(3-Mepq)₂(acac) has less than 10 μm pixel shrinkage when operated at about 10 mA/cm² constant dc current for 1000 hours at room temperature. Accordingly, it is reasonable to expect that a pixellated display incorporating the organic light emitting device of Kwong's claim 2 would inherently meet the shrinkage limitation set forth in present claim 29, regardless of the initial size of the pixels. Further, whether such a display would meet the %area shrinkage limitation set forth in present claim 1 would depend upon the initial size of the pixel. One of ordinary skill in the art would have been motivated to optimize the pixel size based on the intended use of the pixellated device, with larger pixel sizes being suitable for low resolution displays, and larger pixel sizes inherently (based on the teachings of the present specification) exhibiting lower %area pixel shrinkage than smaller pixel sizes.

With respect to the requirement for a photoresist material to make a grid which defines the pixels as required by present claims 3, 4, 32 and 33, it would have been within the level of

Art Unit: 1774

ordinary skill of a worker in the art at the time of the invention to provide pixels by known techniques, and the use of photoresists, positive or negative, was known at the time of the invention.

18. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

19. Claims 1-4 and 29-33 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,835,469 B2.

Although the conflicting claims are not identical, they are not patentably distinct from each other. It is well-known in the art to use an organic light emitting device to make a pixellated device, and it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to incorporate the patented light emitting device into a pixellated device.

With respect to the requirement for a photoresist material to make a grid which defines the pixels as required by present claims 3, 4, 32 and 33, it would have been within the level of

Art Unit: 1774

ordinary skill of a worker in the art at the time of the invention to provide pixels by known techniques, and the use of photoresists, positive or negative, was known at the time of the invention.

The compound required for the patented organic light emitting device is Ir(3-Mepq)₂(acac) as depicted in Figure 4 of the present application. Figure 3 of the present application demonstrates that Ir(3-Mepq)₂(acac) has less than 10 μm pixel shrinkage when operated at about 10 mA/cm² constant dc current for 1000 hours at room temperature. Accordingly, it is reasonable to expect that a pixellated display incorporating the organic light emitting device of patent claim 2 would inherently meet the shrinkage limitation set forth in present claim 29, regardless of the initial size of the pixels. Further, whether such a display would meet the %area shrinkage limitation set forth in present claim 1 would depend upon the initial size of the pixel. One of ordinary skill in the art would have been motivated to optimize the pixel size based on the intended use of the pixellated device, with larger pixel sizes being suitable for low resolution displays, and larger pixel sizes inherently (based on the teachings of the present specification) exhibiting lower %area pixel shrinkage than smaller pixel sizes.

20. Miscellaneous:

The examiner suggests inserting a comma after “perhaloalkyl” in the third line from the end of claim 5, and in the penultimate line of each of claims 17, 34 and 40.

A period is needed at the end of claim 6.

Art Unit: 1774

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Igarashi et al. (US 2001/0019782 A1) disclose the phosphorescent emissive material required by present claim 6, for use in an organic light emitting display device. For example, see paragraph [0002], and see formula (1-4) on page 10. While the prior art renders obvious an organic light emitting device comprising an array of pixels wherein each pixel comprises the prior art phosphorescent emissive material, insufficient information is of record to determine whether such a device would necessarily meet the pixel shrinkage limitations of the present claims.

22. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for Art Unit 1774 is (703) 872-9306 for all official faxes. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
February 07, 2005



MARIE YAMNITZKY
PRIMARY EXAMINER

1774